REMARKS

Claims 1-3, 6-8, 12, 14-19, 22-33, and 35-36 are currently pending in the present application, with claims 1, 16, and 29-30 being written in independent form. Claims 1, 16, and 29-30 have been amended to include the limitations of claims 37-38 and 42-43, respectively. Claims 1, 3, 12, 16-17, and 29-31 have also been amended for formalistic reasons. Claims 4-5, 9-11, 13, 20-21, 34, and 37-43 have been cancelled without prejudice or disclaimer, with claims 4-5, 9-11, 13, 20-21, and 34 having been previously cancelled. Thus, the amendments neither involve new matter nor require further search and/or consideration.

Interview Summary

Applicants thank the Examiner for the telephonic interview of January 31, 2011. During the interview, the claims were discussed in view of the indefiniteness and art rejections. With regard to the indefiniteness rejection, it was agreed that amending the independent claims to recite "conductive nanoparticles with a same type of surface charge" would overcome the rejection. With regard to the art rejections, no agreement was reached.

Claim Rejection under 35 U.S.C. § 112, Second Paragraph

Claims 1-3, 6-8, 12, 14-19, 22-33, and 35-43 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. This rejection has been rendered moot by the present amendments. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

Claim Rejection under 35 U.S.C. § 102/103 (Ishihara)

Claims 1-3, 7-8, 12, 15-18, 25, 29-32, and 34 stand rejected under 35 U.S.C. § 102(a) as being anticipated by, or alternatively, under 35 U.S.C. 103(a) as being unpatentable over WO 02/081131 (Ishihara). Applicants respectfully traverse this rejection for the reasons below.

The Examiner has interpreted the fine metal particles of Ishihara as the claimed "conductive nanoparticles."[1] Without conceding as to any of the Examiner's assertions that are not specifically addressed herein, Applicants note that Ishihara *fails*, as a preliminary matter, to disclose or suggest that "the conductive nanoparticles are present in an amount of **at least 20 wt%** relative to the dispersion sol," as recited by amended claims 1, 16, and 29-30. Rather, Ishihara expressly teaches that the fine metal particles are present in an amount of "0.05 to 5% by weight" based on the weight of the coating liquid.[2]

Applicants note that, unlike the prior art, the present invention allows nanoparticles to be stable in a relatively highly concentrated dispersive solution. Generally, nanoparticles become aggregated in the solution in which the nanoparticles are dispersed, because the nanoparticles have a relatively small size and are present at a relatively high concentration. In particular, as the concentration of the nanoparticles increases, the instability of the nanoparticles also increases. Conversely, if the concentration of the nanoparticles is low (as in

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1 *Final Office Action (12/08/2010)*: p. 3, section 4.

2 *Ishihara (US 7,494,710, national stage of WO 02/081131)*: col. 9, ln. 41-44; col. 12, ln. 21-24.

the references recited by the Examiner), aggregation or cohesion typically does not occur.

In contrast to the prior art, the present invention discloses nanoparticles being present in an amount of at least 20 wt% relative to the dispersion sol (which is a much higher concentration than that of the prior art). In spite of such a high concentration, the present invention allows a highly concentrated but stable nanoparticle dispersion to be possible, thereby resulting in a relatively high conductivity, low IR cutoff rate (e.g., Tables 1 to 3), favorable color reproducibility, and high surface hardening.

For at least the reasons above, there can be no anticipation with regard to claims 1, 16, and 29-30. Consequently, there can be no anticipation with regard to claims 2-3, 7-8, 12, 15, claims 17-18, 25, and claims 31-32 at least by virtue of their dependency from claims 1, 16, and 30, respectively. The rejection with regard to claim 34 have been rendered moot by the previous cancellation of that claim. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the above rejection.

Claim Rejection under 35 U.S.C. § 103 (JP '543)

Claims 1-3, 7-8, 12, 15-18, 25, and 29 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 2002-216543 (JP '543). Applicants respectfully traverse this rejection for the reasons below.

The Examiner has interpreted the ITO particles of JP '543 as the claimed "conductive nanoparticles."[3] Without conceding as to any of the Examiner's assertions

[3] *Final Office Action (12/08/2010)*: p. 5, section 6.

that are not specifically addressed herein, Applicants note that JP '543 *fails*, as a preliminary matter, to disclose or suggest that "the conductive nanoparticles are present in an amount of **at least 20 wt%** relative to the dispersion sol," as recited by amended claims 1, 16, and 29. Rather, JP '543 expressly teaches that the ITO particles are present in an amount of "1.4 – 4.5 wt%."[4]

As noted above, unlike the prior art, the present invention allows nanoparticles to be stable in a relatively highly concentrated dispersive solution. Generally, nanoparticles become aggregated in the solution in which the nanoparticles are dispersed, because the nanoparticles have a relatively small size and are present at a relatively high concentration. In particular, as the concentration of the nanoparticles increases, the instability of the nanoparticles also increases. Conversely, if the concentration of the nanoparticles is low (as in the references recited by the Examiner), aggregation or cohesion typically does not occur.

In contrast to the prior art, the present invention discloses nanoparticles being present in an amount of at least 20 wt% relative to the dispersion sol (which is a much higher concentration than that of the prior art). In spite of such a high concentration, the present invention allows a highly concentrated but stable nanoparticle dispersion to be possible, thereby resulting in a relatively high conductivity, low IR cutoff rate (e.g., Tables 1 to 3), favorable color reproducibility, and high surface hardening.

For at least the reasons above, a *prima facie* case of obviousness cannot be established with regard to claims 1, 16, and 29. Consequently, a *prima facie* case of obviousness cannot be established with regard to claims 2-3, 7-8, 12, 15 and claims 17-18, 25, at least by virtue of their dependency from claims 1 and 16, respectively.

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4 *JP '543 (English translation)*: par. [0020], [0030], and [0032].

Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the above rejection.

Claim Rejections under 35 U.S.C. § 103 (Kawamoto + [JP '543 or Ishihara])

Claims 1-3, 6-8, 12, 14-19, 22-33, and 35-43 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over US 6,632,274 (Kawamoto) in view of JP '543 or Ishihara. Applicants respectfully traverse this rejection for the reasons below.

The Examiner has interpreted the ultrafine particles of Kawamoto as the claimed "conductive nanoparticles." Without conceding as to any of the Examiner's assertions that are not specifically addressed herein, Applicants note that the cited art *fails*, as a preliminary matter, to disclose or suggest that "the conductive nanoparticles are present in an amount of **at least 20 wt%** relative to the dispersion sol," as recited by amended claims 1, 16, and 29-30. For instance, Kawamoto expressly teaches that the ultrafine particles are present in an amount of "0.01 to 1 part by mass per 100 parts by mass of the total mass."[5] The above-discussed deficiencies with regard to JP '543 and Ishihara are also applicable to this rejection. Thus, the additional teachings of JP '543 and Ishihara fail to remedy the deficiencies of Kawamoto.

As noted above, unlike the prior art, the present invention allows nanoparticles to be stable in a relatively highly concentrated dispersive solution. Generally, nanoparticles become aggregated in the solution in which the nanoparticles are dispersed, because the nanoparticles have a relatively small size and are present at a relatively high concentration. In particular, as the concentration of the nanoparticles increases, the instability of the nanoparticles also increases.

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5 *Kawamoto*: col. 10, ln. 31-37.

Conversely, if the concentration of the nanoparticles is low (as in the references recited by the Examiner), aggregation or cohesion typically does not occur.

In contrast to the prior art, the present invention discloses nanoparticles being present in an amount of at least 20 wt% relative to the dispersion sol (which is a much higher concentration than that of the prior art). In spite of such a high concentration, the present invention allows a highly concentrated but stable nanoparticle dispersion to be possible, thereby resulting in a relatively high conductivity, low IR cutoff rate (e.g., Tables 1 to 3), favorable color reproducibility, and high surface hardening.

For at least the reasons above, a *prima facie* case of obviousness cannot be established with regard to claims 1, 16, and 29-30. Consequently, a *prima facie* case of obviousness cannot be established with regard to claims 2-3, 6-8, 12, 14-15, claims 17-19, 22-28, and claims 31-33, 35-36, at least by virtue of their dependency from claims 1, 16, and 30, respectively. The rejections with regard to claims 37-43 have been rendered moot by the cancellation of those claims. Accordingly, Applicants respectfully request the Examiner to reconsider and withdraw the above rejection.

CONCLUSION

In view of the above, Applicants respectfully request the Examiner to allow all of the pending claims in the present application.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number below.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. §1.17; particularly, extension of time fees.

Respectfully submitted,

HARNESS, DICKEY, & PIERCE, P.L.C.

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